1.0 Executive Summary

The OrangeLine feasibility study is a financial, engineering and environmental assessment of an advanced technology, high-speed transportation system operating along the former Pacific Electric "Red Car" and adjoining corridors. This corridor extends from downtown Los Angeles to central Orange County. The study was initiated by the Gateway Cities Council of Governments, in cooperation with the Southern California Association of Governments, to see if the OrangeLine is economically feasible and can provide high quality access and mobility improvements to support current and planned development along the corridor.

Results indicate that the OrangeLine transportation system can provide the required transportation improvements to support current and future development, and that it could be successfully built and operated without the need for significant government subsidies. This finding is based on the application of unit costs from previous maglev studies and the use of ridership estimates assuming state-of-the-art service to predict system operating revenues. Other key assumptions are described in later sections of this report.

Given the passenger levels and operating revenues forecasted, the system is capable of covering operations and maintenance (O&M) costs, and able to pay down its capital costs over time. Federal funding support would reduce the perceived risks of deploying this new transportation technology, and help to bring in private investors to participate in the project. Based on the above information, the OrangeLine should be considered as a viable candidate for federal funding support to pay for predeployment studies and environmental clearance under the National Maglev Demonstration Program. Federal funding support would be used to conduct more detailed analyses required to validate the preliminary findings of this study, to reduce the perceived risks of deploying this new transportation technology, and to help bring in private investors to participate in the project.

The Gateway Cities Council of Governments (GCCOG) can successfully deploy the OrangeLine and make it operational as early as 2008 by doing the following:

- Form a joint power authority to deploy the OrangeLine transportation system, in conjunction with a private partner,
- Complete more detailed studies, and required state and federal environmental reviews, to validate results of this preliminary feasibility analysis,
- Gain access to public and private rights of way along the 33-mile development corridor,
- Secure public and private construction financing,
- Secure state legislation to facilitate OrangeLine station-area development, and
- Entitle land for development around OrangeLine stations.

OrangeLine Corridor Development

This study focuses on a development area within 13 cities located along the OrangeLine corridor extending from downtown Los Angeles to central Orange County. Land use plans and development proposals for these cities indicate numerous recent and anticipated development projects along the corridor that are valued in excess of $7 billion. A few of these developments are listed below.

- Staples Center - completed in 2000
- Disney Hall - under construction
- Downtown Los Angeles Cathedral - under construction
- Anaheim Resort - completed in 2001
- Cerritos Library - completed in 2002

Further, input from the corridor cities and estimates of development potential, highlight that additional development can be realized if a high-speed transportation system is implemented in the corridor. The cumulative estimate provided by the cities is summarized below:

- 2,800 – 4,000 residential housing units
- 9.5 – 11 million square feet retail space
- 17.8 – 23.4 million square feet office and hotel space
- 2.1 – 2.8 million square feet of industrial space

Regardless of the magnitude of economic development, it is clear that transportation improvements are required to support current and future developments. Without these improvements, access and mobility in the corridor will deteriorate and economic development will be constrained.

The OrangeLine High-Speed Maglev System

The OrangeLine is proposed as an elevated, high-speed transportation system that would provide frequent, high quality transportation service to each of the stations along the 30 to 33-mile route. Vehicles would arrive every 10-minutes and travel at top speeds of 120 miles per hour or more. If it were made non-stop, a trip from Anaheim to downtown Los Angeles could take as little as 20 minutes. Including stops at other stations, the trip could still be made in 34 to 43 minutes, making it highly competitive compared with the automobile.

The OrangeLine would use magnetically levitated ("maglev") vehicles in which powerful magnets on the track and vehicles lift and propel the vehicles forward. The area underneath the track could be used for other purposes. For example, there is a severe shortage of parkland in the cities along the OrangeLine corridor. Cities could use the area underneath the OrangeLine track as a greenbelt for recreational activities, including walking/riding trails and other amenities. The vision for the OrangeLine includes significant landscaping to mitigate visual impacts and to create a green corridor through this part of the region.

OrangeLine stations would be located in current and planned development centers located along the 33-mile corridor. Stations would be served by pedestrian walkways and other transportation modes, such as bike paths, shuttle buses, station cars and taxis, to provide feeder access and distribution to areas beyond walking distance.

Background

The GCCOG is a Joint Powers Authority of 27 cities in southeast Los Angeles County that was formed to address sub-regional issues such as housing and economic development, transportation, air quality, job growth and improving the quality of life. The Council's Executive Committee has endorsed the OrangeLine feasibility study to assess its promise as a strategy for achieving multiple Council of Government goals.

The following Gateway cities, along with the City of Los Angeles, provided funding for the OrangeLine Feasibility Study: Artesia, Bell, Bellflower, Cerritos, Cudahy, Downey, Huntington Park, Maywood, Paramount, South Gate, and Vernon. The Southern California Association of Governments (SCAG) provided matching funds and technical and administrative support. SCAG is the metropolitan planning organization for the six-county region that encompasses Los Angeles, Orange, Riverside, San Bernardino and Ventura Counties.

In conjunction with the West Orange County Cities Association (WOCCA), the Orange County Transportation Authority (OCTA) is currently conducting a Project Definition Study for high capacity transit opportunities in west Orange County. WOCCA cities along the OrangeLine corridor that have endorsed the OrangeLine Feasibility Study include Cypress, La Palma and Stanton. GCCOG and WOCCA are currently coordinating their studies.

The Regional Context

The 1998 and 2001 SCAG Regional Transportation Plan (RTP) includes the development and deployment of an intra-regional high-speed maglev system as part of the overall regional mobility strategy. The RTP identifies a potential 300-mile intra-regional system connecting major population and employment centers, airports and inter-modal facilities. In December 2000, the California Maglev Deployment Program pre-deployment planning study was completed. This study confirmed the feasibility of a high-speed maglev system connecting Los Angeles International Airport (LAX) to March Inland Port in western Riverside County. In December 2001, a second study (LAX-Palmdale High Speed Ground Access Study) was completed that confirmed the feasibility of a high-speed maglev connection between North Los Angeles County, LAX and the Los Angeles Union Passenger Terminal (LAUPT). In July 2002, a third study will be completed that examines a connection between Los Angeles and Orange Counties along the Interstate 405 and Interstate 5 corridors.

Feasibility of the OrangeLine to Support Corridor Development

In assessing the feasibility of the OrangeLine, a key question is whether or not the system can generate sufficient revenues to cover capital and operating costs. The ability of the OrangeLine to be self-financing alleviates the need to seek public funds from local, state and federal sources. If the project is required to rely on conventional public transportation funding sources, it is unlikely that the OrangeLine could be built within the next 20 years or more. Demand on traditional federal and state transportation funding sources already exceeds the ability of current government funding programs. The OrangeLine can compete against other transportation projects, however transportation agencies have not considered the OrangeLine corridor as a high priority project for public support.

OrangeLine ridership studies and empirical data from existing transit projects in the region (such as the Blue and Green line light rail projects and the Red Line subway) indicate that the OrangeLine would attract a base ridership of over 46,000 riders per day. This does not take into consideration the additional ridership that could be generated by more compact urban development around the station areas.

The estimate of 46,000 daily riders assumes current development trends with a supporting transit feeder network. This ridership will be higher if the cities along the corridor are successful in fostering development around the OrangeLine stations. Preliminary estimates suggest this ridership potential at 5,700 to 7,000 daily riders depending on the alignment and stations.

Under either the conservative ridership scenario or a higher ridership estimate, the OrangeLine would generate sufficient annual operating revenues to cover construction and on-going operating costs. The OrangeLine is projected to cost about $3.6 billion dollars to build[1]. While further analysis may indicate a lower construction cost, the current preliminary estimate is adequate for the purposes of this feasibility study.

Construction costs would be financed through tax-exempt municipal bonds. The low operating cost of maglev technology and the high quality of service the system provides are key to the financing plan and the ability of the OrangeLine to cover capital and operating costs from passenger revenues.

The financial plan assumes that the right-of-way along the former Pacific Electric corridor, currently under ownership of the LACMTA and OCTA, would be made available to the Gateway Cities Council of Governments at no charge. This is believed to be a reasonable assumption, as the right-of-way would be used for the transportation purpose for which it was purchased. Currently, these agencies are studying the corridor and every effort will be made to coordinate the OrangeLine findings with these ongoing studies.

[1] Depending on the alignment, stations and phasing of the Regional Maglev Network, the cost estimates range from $3.3 billion to $3.9 billion.

Benefits of the OrangeLine Development Project

It is anticipated that additional housing, office and retail development projects completed along the OrangeLine corridor by 2025 will accommodate an increased population of 8,000 people within the quarter mile station areas and tens of thousands more in the surrounding area, as well as up to 125,000 additional jobs. This growth in population and employment will result in added trips per day in the corridor.

In addition to providing a very high quality, non-polluting transportation service to over 46,000 daily riders by 2025, the OrangeLine will also divert an estimated number of daily riders to other transit modes, thus significantly reducing the traffic impacts of future growth. The OrangeLine is projected to reduce auto trips in the corridor compared to travel patterns that would exist if the OrangeLine were not built.

Aside from the transportation benefits that the OrangeLine will bring, the largest benefit is its economic stimulus. The OrangeLine can create thousands of construction jobs during its construction period. Economic development stimulated by the OrangeLine could increase investment and economic activity in the corridor by $5 billion. An additional 125,000 permanent jobs are possible as a result of the OrangeLine corridor development projects.

Next Steps – Actions to Take

The Gateway Cities Council of Governments can successfully deploy the OrangeLine and make it operational as early as 2008 by doing the following:

- Form a joint power authority (JPA) to deploy the OrangeLine maglev system, in conjunction with a private partner – The JPA would consist of the cities along the corridor that agree to participate in OrangeLine deployment and who have a direct stake in the success of the system. SCAG, LACMTA and OCTA should also be considered for membership in the JPA.
- Complete more detailed engineering and financial analyses and required state and federal environmental reviews. These studies are required to validate the results of this preliminary feasibility assessment, prior to final decisions being made to deploy the OrangeLine. FY2003 federal funding should be pursued to fund completion of these studies. Efforts should be undertaken to have the OrangeLine included in the federal Maglev Demonstration Program.
- Gain access to public and private rights of way along the 33-mile development corridor – LACMTA and OCTA own most of the former PE right-of-way. The OrangeLine JPA, LACMTA or OCTA should acquire the additional rights-of-way or negotiate easements through them with the current owners.
- Secure public and private construction financing – upon completion of pre-deployment studies, construction funding should be obtained.

- Secure state legislation to facilitate OrangeLine station-area development – State legislation should be pursued that enables corridor cities to create the type and level of station-area development envisioned in city general plans and development plans.

- Entitle land for development around OrangeLine stations – cities should take proactive steps to entitle land for development that surrounds OrangeLine stations as a strategy to entice property owners and developers to invest and create new housing and other supported elements.

Additional Information

This report is based on ridership information provided by SCAG prior to April 9, 2002. Should any additional information become available that affects the results of this study, the project team will issue an addendum to this report.